

Inverter voltage control accuracy





Overview

Does parametric accuracy affect model-free predictive voltage control for grid-forming inverters?

Conventional model-based predictive voltage control (MBPVC) for grid-forming inverters (GFIs) in renewable energy system is sensitive to parametric accuracy. To address this issue, an improved model-free predictive voltage control (MFPVC) is proposed for grid-forming inverter. First, the parametric impact on MBPVC is analyzed in GFI.

How do grid-forming inverters achieve power support and voltage optimization?

This paper proposes a robust voltage control strategy for grid-forming (GFM) inverters in distribution networks to achieve power support and voltage optimization. Specifically, the GFM control approach primarily consists of a power synchronization loop, a voltage feedforward loop, and a current control loop.

Can research improve inverter control effect?

It indicates that the research method can improve inverter's control effect and solve problems such as voltage deviation, three-phase asymmetry, harmonic pollution, etc. that are easily generated by the output terminal voltage. Simultaneously, research has provided theoretical basis and data support for the research of microgrids.

Can model-free predictive voltage control be used for grid-forming inverters?

Voltage performance comparison. This paper proposes an improved model-free predictive voltage control (MFPVC) for grid-forming inverters (GFIs) in renewable energy systems. The proposed MFPVC establishes and updates the adaptive ultra-local data-model (ULDM) for the GFI, eliminating the impact of parameters on voltage prediction.



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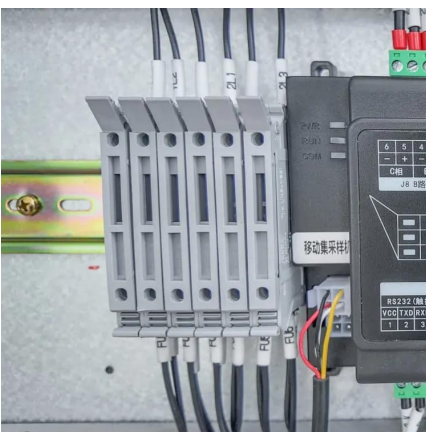


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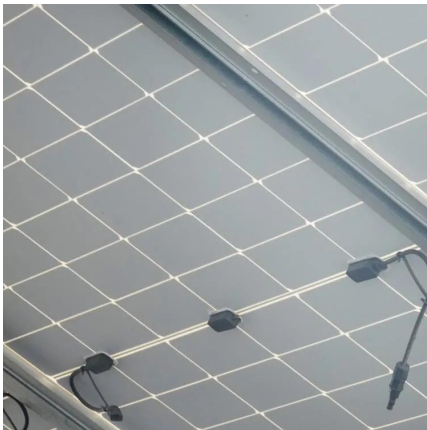
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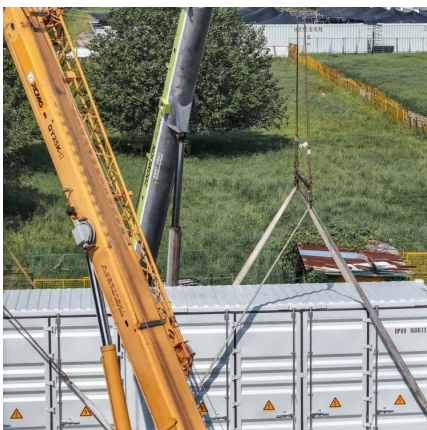


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